

Armin Schöppach:  
US Patent Application No. 10/047,150  
(Z) 99038 P US

In the Claims: The claims, as currently amended, are set forth as follows:

1. Cancelled.
2. Cancelled.
3. Cancelled.

4. (Currently Amended) The optical system comprising  
a mirror comprising a mirror member carrying a surface, which mirror member is  
connected to a further optical element by means of a mounting (15, 115) and  
compensation elements (19, 119),  
~~wherein with a mirror member comprising quartz, the compensation elements~~  
~~comprise at least partially titanium, and with a mirror member comprising SiN the~~  
~~compensation elements comprise at least partially aluminum or titanium, and with~~  
~~a mirror carrier comprising Zerodur the compensation elements comprise at least~~  
~~partially invar.~~

5. (Currently Amended) The optical system according to claim 4, wherein at least  
one of the optical elements comprises a lens.

6. (Currently Amended) The optical system according to claim 4, wherein the  
optical system comprises a telescope, the first optical element comprises a  
primary mirror (103) of the telescope (101) and the second optical element  
comprises a secondary mirror (127) of the telescope (101).

7 (Original). The optical system according to claim 4, wherein the mounting comprises  
a material of density of at most  $2.5 \times 10^3 \text{ kg/m}^3$ .

8. (Currently Amended) The optical system according to claim 4, wherein the  
compensation elements (19, 119) are ~~arranged in a region of~~ connected to at least

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one of the optical elements (3, 27, 103, 127), coaxially of an optical axis (2, 102)  
defined by the optical elements (3, 27, 103, 127).

- 9.(Currently Amended) The optical system according to claim 6 3, wherein the compensation elements (119) are arranged coaxially of the primary mirror (103).
- 10.(Currently Amended) The optical system according to claim 6 3, wherein the mounting comprises a telescope tube comprising an end facing the primary mirror and an end facing the secondary mirror, wherein the compensation element (119) comprises at least three feet (121) that at one end carry an end of the telescope tube (17) facing the primary mirror (103), and at another end are connected to the primary mirror (103).
- 11.(Currently Amended) The optical system according to claim ~~4~~ 8, wherein the compensation elements are supported on a mirror carrier (105) carrying the mirror surface (107) of the primary mirror (103).
- 12.(Currently Amended) The optical system according to claim ~~4~~ 4, wherein the compensation elements (19, 119) have a thermal expansion coefficient deviating from that of the mounting (15, 115).
- 13 (Original). The optical system according to claim 3, wherein the mirror (3, 103) comprises a mirror member (5) comprising SiN carrying a mirror surface (7, 107).
- 14 (Original). The optical system according to claim 1, wherein the mounting (15, 115) comprises C/C SiC material.
- 15.(Currently Amended) The optical system according to claim 3, wherein the mirror (3, 103) ~~comprises~~ is a mirror produced by replication technique.

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16. (Currently Amended) The optical system according to claim ~~13~~ 10, wherein the mirror member (5, 105) is connected directly to a mounting element (9, 109) for isostatic mounting, and the mounting (15, 115) is mounted to the mirror member (5, 105).
17. (New) The optical system according to claim 4, comprising a mirror member comprising quartz, wherein the compensation elements comprise at least partially titanium.
18. (New) The optical system according to claim 4, comprising a mirror member comprising SiN, wherein the compensation elements comprise at least partially aluminum or titanium.
- 19 (New) The optical system according to claim 4, comprising a mirror member comprising Zcrodur, wherein the compensation elements comprise at least partially invar.
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